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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,816	12/04/2003	Charles Hood	16356.836 (DC-05456)	7468

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EXAMINER	
HOFFBERG, ROBERT JOSEPH	

ART UNIT	PAPER NUMBER
2835	

DATE MAILED: 11/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/727,816	HOOD ET AL.	
	Examiner	Art Unit	
	Robert J. Hoffberg	2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/24/06*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-11,13-18 and 20-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5, 7-11, 13-18 and 20-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 June 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

Response to Arguments

1. Applicant's arguments with respect to claims 1-5, 7-11, 13-18 and 20-21 have been considered but are moot in view of the new ground(s) of rejection.

2. Applicant argues that Villanueva et al. (US 2005/0030718) fail to "apply a constant compressive force to the processor sufficient to mate the processor with the processor" socket. The examiner respectfully disagrees. Even though socket #30 appears to have a handle (unlabeled) indicting that the socket might be a zero insertion force socket, Villanueva et al. at para. 0010, lines 7-10 discloses that [i]n the closed position, the processor retainer engages the CPU to apply a retaining force that maintains the CPU within the processor socket" and does not disclose that there is any other force to retain the processor in the processor socket.

3. Applicant argues "a stress force resulting from the resilient load member applying the constant compressive force is not transferred to the processor socket." The examiner respectfully disagrees. The applicant discloses on pages 3 thru 4 para. 0007 as amended (first and last sentences) that "a processor loading apparatus is provided that can apply the high amount of force necessary to mate a processor to a processor socket without subjecting the processor socket solder joints to unwanted stresses" and "[t]he connection of the second end to the connector portion deforms the load member into engagement with the processor and urges the processor into the processor socket." A compressive force (specification, page 3, line 3) on the load member to the processor is being claimed. This compressive force is then transferred the processor to the

processor socket. The stress force being claimed is also transferred from the load member through the processor to the processor socket. The applicant's disclosure states that the resilient load member applies a constant compressive force that is transferred to the processor socket through the processor and seeks to avoid unwanted stresses caused by non-compressive forces on the processor socket solder joints (specification, paras. 0005 and 0007).

4. Regarding the motivation to combine Villanueva et al. with Hoper et al. (US 5,761,036). The examiner respectfully disagrees. The load member of Villanueva et al. is being modified by the curved resilient load member of Hopfer et al. for the purpose of providing a biasing force of the processor against the socket to insure electrical and mechanical contact (Hopfer, Col. 8, line 7). Both the load member of Villanueva et al. and Hopfer et al. need to be resilient to apply a force to (Para. 0010, lines 8-9) the processor sufficient to mate the processor with the processor socket. The force in both cases is a constant compressive force because both load members are latched into a fixed position and do not move once latched. While Villanueva et al. is silent about the shape of the load member in the closed position, the shape will deform from the flat shape shown in the open position in order to apply a retaining force that maintains the processor within the processor socket.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-5, 7-11, 13-18 and 20-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The curved resilient load member when deformed into a substantially parallel engagement acts as a spring and applies a stress force (stress is the intensity of the compressive force divided by the area applied) on the processor socket transmitted through the processor.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 1-5, 7-11, 13-18 and 20-22 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Evidence that independent claims 1, 7, 14, 21 and 22 fail(s) to correspond in scope with that which applicant(s) regard as the invention can be found in his specification. In the specification, applicant discloses that resilient load member applies a compressive force on the processor socket. The claims will be examined based upon "a stress force resulting from the resilient load member applying the constant compressive force is transferred to the processor socket.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

> the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-2, 4-5 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Villanueva et al. (US 2005/0030718) in view of Hopfer et al. (US 5,761,036).

Villanueva et al. teach a processor loading apparatus comprising: a board member (#26); a processor socket (#30) mounted on the board member; a processor (#28) seated in the processor socket; a frame member (#14) mounted on the board member; a plurality of connector portions (#16 and #24) on the frame member; a load member (#12) with a first end (#18) connected to one of the connector portions and a second end (#16) connected to another one of the connector portions, whereby the connection of the second end the retains the load member into a substantially parallel engagement (Para. 0019, line 16) with the processor and applies a constant compressive force to (Para. 0010, lines 8-9) the processor sufficient to mate the processor with the processor socket; a heat sink mounted on the frame (para. 0022, lines 11-13) and adjacent to the load member (see Fig. 3); and the load member having an opening (#20) formed therein permitting the processor to extend through the opening (See Fig. 4) into contact with a heat sink (#34), whereby a stress force resulting from the resilient load member applying the constant compressive force is transferred to the processor socket (Para. 0010, lines 8-10) (claims 1 and 22), the frame member surrounds the processor socket (see Fig. 2) (claim 2), the first end of the load member is pivotally connected (#16) to one of the connector portions and the second end is latched (#18) to another one of the connector portions (claim 4), and the processor

includes a thermal connection surface (#28 top) (claim 5). Villanueva et al fail to teach a curved resilient load member that deforms the curved load member into a substantially parallel engagement. Hopfer et al. teaches a curved resilient (see Fig. 1) load member (#16) that deforms the curved load member into a substantially parallel (see Fig. 1) engagement. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the processor loading apparatus of Villanueva et al. with the curved resilient load member of Hopfer et al. for the purpose of biasing force of the processor against the socket to insure electrical and mechanical contact (Col. 8, line 7).

11. Claims 3, 7-11, 13-18 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Villanueva et al. (US 2005/0030718) in view of Hopfer et al. (US 5,761,036) and further in view of Ma (US 6,791,847).

With respect to Claim 3, Villanueva et al. in view of Hopfer et al. teach the claimed invention except for a support member. Ma teaches a support member (#72) mounted on the board member (#50) adjacent to the frame member (#30). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the processor loading apparatus of Villanueva et al. in view of Hopfer et al. with the support of Ma for the purpose of using the support member on an opposite side of the board to fasten the frame member to the board member.

With respect to Claims 7-11, 13-18 and 20, Villanueva et al. teach a heat sink mounting apparatus comprising: a board member (#26); a processor socket (#30) mounted on the board member and coupled to a mass storage device (Para. 0004, line 5) and a system memory (Para. 0004, line 5); a processor (#28) seated in the processor socket; a frame member (#14) mounted on the board member; a plurality of connector members (#16 and #24) on the frame member; a load member (#12) with a first end (#18) connected to one of the connector members and a second end (#16) connected to another one of the connector members, whereby the connection of the second end retains load member into a substantially parallel engagement (Para. 0019, line 16) with the processor and applies a constant compressive force to (Para. 0010, lines 8-9) the processor sufficient to mate the processor with the processor socket; a heat sink (#34) mounted on the frame and adjacent to the load member; and the resilient load member having an opening (#20) formed therein permitting the processor to extend through (see Fig. 4) the opening into contact with the heat sink, whereby a stress force resulting from the resilient load member applying the constant compressive force is transferred to the processor socket (Para. 0010, lines 8-10) (claims 7 and 9), the frame member surrounds the processor socket (see Fig. 2) (claims 8 and 15), the first end of the load member includes a pivotal connection (#16) and the second end includes a latched connection (#18) (claims 10 and 17), the processor includes a thermal connection surface (#28 top) (claims 11 and 18), and the heat sink engages (see Fig. 3) the thermal connection surface (claims 13 and 20). Villanueva et al. fails to teach a support member and a curved resilient load member that deforms the curved load member into

a substantially parallel engagement. Hopfer et al. teaches a curved resilient (see Fig. 1) load member (#16) that deforms the curved load member into a substantially parallel (see Fig. 1) engagement. Ma teaches a support member (#72) mounted on an opposite side (see Fig. 1) of the board member (#50) and adjacent to the frame member (#30). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the processor loading apparatus of Villanueva et al. with the curved resilient load member of Hopfer et al. and the support of Ma for the purpose of biasing force of the processor against the socket to insure electrical and mechanical contact (Col. 8, line 7) and providing a support member on an opposite side of the board and provide rigidity for fastening the frame member to the board member.

Regarding method claim 21, the method steps recited in the claims are obviously necessitated by the device structure as taught by Villanueva et al. in view of Hopfer et al. and further in view of Ma as recited above in the rejection to claim 14.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert J. Hoffberg whose telephone number is (571) 272-2761. The examiner can normally be reached on 8:30 AM - 4:30 PM Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on (571) 272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MICHAEL DATSKOVSKIY
PRIMARY EXAMINER

RJH

11/02/06